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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/051,833	01/16/2002	Jeffrey Craig	SANDP007	1181

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EXAMINER

BADERMAN, SCOTT T

ART UNIT	PAPER NUMBER
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2113

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/051,833

Applicant(s)

CRAIG ET AL.

Examiner

Scott T. Baderman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17, 20-39 and 41-46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17, 20-39 and 41-46 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-17, 20-39 and 41-46 are rejected under 35 U.S.C. 102(e) as being anticipated by Moshayedi (2002/0091965).

As in claims 1, 6, 8, 21, 23, 34, 39, 41, 42, 44, 45 and 46, Moshayedi discloses a method and system for determining a status associated with a memory system, the memory system including a plurality of spare units of erase, the method comprising: updating a counter, the counter being arranged to be updated each time a spare unit of erase of the plurality of spare units of erase is reassigned, wherein the counter indicates a number of spare units of erase remaining in the plurality of spare units of erase; comparing the counter to a threshold value, the threshold value being indicative of a predetermined number of spare units of erase of the plurality of spare units of erase which are yet to be reassigned in order for the memory system to be considered as reliable; and generating an indication when comparing the counter to the threshold value yields a first result, wherein the indication is arranged to indicate that the

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memory system is substantially near a failure (end-of-life) condition (Figures 1A-4, Abstract, pages 1-4). Moshayedi also discloses wherein the memory system is arranged to operate in conjunction with a host system (Figures 1A-B), and wherein the controller is arranged to reassign a spare unit of erase included in the plurality of spare units of erase in response to a request from the host system (paragraphs 32-36). Moshayedi further discloses saving the indication (paragraphs 50 and 56). Moshayedi further discloses wherein the memory system is one of a PC card, a CompactFlash card, a MultiMedia Card, a SmartMedia card, a Memory Stick card, and a Secure Digital card (Figure 1A, paragraphs 32-34).

As in claims 2 and 35, Moshayedi discloses wherein updating the counter includes decrementing the counter each time a spare unit of erase of the plurality of spare units of erase is reassigned (Abstract, paragraph 16).

As in claims 3, 7, 22 and 36, Moshayedi discloses wherein comparing the counter to the threshold value includes determining when a value of the counter is less than or equal to the threshold value (Abstract).

As in claims 4 and 37, Moshayedi discloses wherein the first result (i.e., the action taken) is arranged to indicate that the value of the counter is less than or equal to the threshold value (Abstract).

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As in claims 5, 9-14, 24-27 and 38, Moshayedi further discloses including: attempting to write data to a first unit of erase; determining when the first unit of erase is worn; reassigning a first spare unit of erase included in the plurality of spare units of erase as the first unit of erase when it is determined that the first unit of erase is worn, wherein updating the counter includes updating the counter to indicate that the first spare unit of erase is reassigned; and writing the data to the reassigned first spare unit of erase (pages 2-4).

As in claims 15 and 28, Moshayedi discloses wherein the plurality of units of erase are a plurality of sectors, and the plurality of spare units of erase are a plurality of spare sectors (Figure 2, paragraphs 39-42).

As in claim 16, Moshayedi further discloses including: a non-volatile memory, wherein the plurality of units of erase, the plurality of spare units of erase, and the first storage element are included in the non-volatile memory (paragraphs 6-8 and 21).

As in claim 17, Moshayedi discloses wherein the memory system is a non-volatile memory system (paragraphs 6-8 and 21).

As in claims 20, 29 and 30, Moshayedi discloses wherein the memory system is one of a PC card, a CompactFlash card, a MultiMedia Card, a SmartMedia card, a Memory Stick card, and a Secure Digital card (Figure 1A, paragraphs 32-34).

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As in claim 31, Moshayedi discloses wherein the host system is arranged to capture information and to attempt to store the information in the memory system (paragraphs 32-35).

As in claim 32, Moshayedi discloses wherein the information is one of still image information, audio information, video image information, and wireless information (i.e., digital camera) (paragraph 32).

As in claim 33, Moshayedi discloses wherein the host system is one of a digital camera, a video camera, a cellular communications device, an audio player, and a video player (paragraph 32).

As in claim 43, Moshayedi discloses wherein the condition which renders the non-volatile memory systems as being substantially unreliable when comparing the counter to the threshold value yields the first result is one of an end-of-life condition and a fault condition (Abstract).

### ***Response to Arguments***

3. Applicant's arguments filed February 22, 2005 have been fully considered but they are not persuasive.

With respect to claims 1-5, 21-23 and 34-38, the Applicant argues that Moshayedi (2002/0091965) does not teach the limitation "updating a counter, wherein the counter is

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arranged to be updated each time a spare unit of erase of the plurality of spare units of erase is reassigned (emphasis added).” The Examiner respectfully disagrees with the Applicant.

First, the Examiner believes that based on the teaching by Moshayedi, “a count is kept of the available spare storage location in a system, and when the amount of available spare locations drop below to a threshold value, and action can be taken (Abstract),” implies that a count is kept and is continually updated each time an available spare storage location is reassigned. The only action (or triggering event) that would take away available spare storage locations is if those locations were no longer considered spares (that is, they are reassigned). The fact that this count is monitored to see if a threshold has been reached, proves that the count is continually updated. With regard to the “request” taught by Moshayedi (paragraph 51), this is only a request for an “updated report” on the count value. The updated report of the count value is not the same as the updates that the counter experiences. That is, updates to the counter are happening continually each time an available spare storage location is no longer available and only after “a period of time has elapsed” will the “report” of this count value be given.

Second, the Examiner believes that the claim can be read much broader than the Applicant is assuming it should be. That is, the claim can be broadly interpreted as “the counter (or count) takes into account each time a spare unit is no longer a spare unit (reassigned). That is, Moshayedi does not ignore a time when a spare unit is reassigned, rather all spare units that are no longer spare units are acknowledged.

With respect to claims 6-17 and 20, the Applicant argues that Moshayedi (2002/0091965) does not teach the limitation “the controller is arranged to reassign a spare unit of erase included

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in the plurality of spare units of erase in response to a request from the host system.” The Examiner respectfully disagrees. The Examiner directs the Applicant to paragraphs 40 and 41 of Moshayedi where it is taught that when the host requests a write to a memory area, if the memory is deemed defective, a reassignment to a spare will take place. Thus, a reassignment takes place in response to a request from a host.

With respect to claim 15, the Applicant argues that Moshayedi (2002/0091965) teaches that the unit of erase is made up of multiple sectors and does not teach that a sector is a unit of erase. The Examiner points out that Moshayedi (paragraph 39) says that a row “typically” holds a plurality of sectors, which, at the very least, would suggest that each row could hold only one sector. But even if the Applicant is given the benefit of the doubt, claim 15 does not say a sector is a unit of erase, rather that a “plurality of units of erase are a plurality of sectors.” Since Moshayedi clearly teaches that a unit of erase is a plurality of sectors, as was pointed out by the Applicant, this is the same as saying that a plurality of units of erase are a plurality of sectors as is claimed.

With respect to claims 20, 30 and 44-46, the Applicant argues that Moshayedi (2002/0091965) does not teach the limitation “the memory system is one of a PC card, a CompactFlash card, a MultiMedia card, a SmartMedia card, a Memory Stick card, and a Secure Digital card.” The Examiner respectfully disagrees. Moshayedi (paragraph 34) clearly teaches that the memory array can be an array of flash cards and media cards. Further, Moshayedi (paragraph 34) teaches “any type” of memory media card may be used without departing from



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the scope of the invention. The Examiner believes that this teaching by Moshayedi anticipates the claim.

With respect to claims 39 and 41-43, the Applicant argues that Moshayedi (2002/0091965) does not teach the limitation “saving the indication.” The Examiner respectfully disagrees. Moshayedi (paragraph 50) teaches of a “spares count” which is an indicator that the memory is nearing an unreliable condition (specifically see lines 20-22 of paragraph 50). This “spares count” is inherently saved (stored) in the computer. Further, in paragraph 56 it is clearly taught that when a threshold is exceeded, which is directly related to the spares count, the system could send an alert message to a user. An alert message is clearly an indicator and is inherently saved in the computer, if only for a brief time in a buffer. Further, the alert message is directly related to the “state where preemptive action can be taken” wherein this state, which is the source of the indicator, is saved on the computer.

### ***Conclusion***

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott T. Baderman whose telephone number is (571) 272-3644. The examiner can normally be reached on Monday-Friday, 6:45 AM-4:15 PM, first Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on (571) 272-3645. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Scott T Baderman  
Primary Examiner  
Art Unit 2113

STB